

## CLAIMS:

1. A method for determining a dielectric layer thickness, the method comprising the steps of:

providing an electrically conductive body (11) having a dielectric layer (13), the dielectric layer (13) being separated from the electrically conductive body (11) by at least one further dielectric layer (3), a surface (15) of the dielectric layer (13) being exposed,

depositing an electric charge onto the exposed surface (15), thereby inducing an electric potential difference between the exposed surface (15) and the electrically conductive body (11), the electric potential difference being a function of a thickness of the dielectric layer (13) and a thickness of the at least one further dielectric layer (3),

determining an electrical parameter relating to the electric potential difference, and

performing a measurement for obtaining measurement data being a further function of the thickness of the at least one further dielectric layer (3), the dielectric layer thickness being selected from the thickness of the dielectric layer (13) and the thickness of the at least one further dielectric layer (3), and

deriving the dielectric layer thickness from the electrical parameter and the measurement data.

2. A method as claimed in Claim 1, wherein the dielectric layer (13) has a dielectric constant, the further dielectric layer (3) has a further dielectric constant, and the dielectric layer thickness is determined from the dielectric constant, the further dielectric constant, the electric charge, the electrical parameter, and the thickness of the dielectric layer (13) or the thickness of the at least one further dielectric layer (3).

3. A method as claimed in Claim 1, wherein after the step of determining the electrical parameter and prior to the step of performing the measurement, the method further comprises the step of at least partly removing the dielectric layer (13) for exposing a further surface (15') of the at least one further dielectric layer (3).

4. A method as claimed in Claim 3, wherein the thickness of the exposed part of the at least one further dielectric layer (3) is kept substantially constant during the step of at least partly removing the dielectric layer (13).

5 5. A method as claimed in Claim 3, wherein the step of at least partly removing the dielectric layer (13) comprises an etching step.

6. A method as claimed in Claim 3, wherein the step of performing the measurement comprises the sub-steps of:

10 depositing a further electric charge onto the exposed further surface (15'), thereby inducing a further electric potential difference between the further exposed surface (15') and the electrically conductive body (11), and

determining a further electrical parameter relating to the further electric potential difference, the measurement data comprising the further electrical parameter.

15

7. A method as claimed in Claim 1, wherein the electrically conductive body (11) and the further dielectric layer (3) are separated by an additional dielectric layer (33), the measurement data being a further function of a thickness of the additional dielectric layer (33), the dielectric layer thickness being selected from the thickness of the dielectric layer (13), the thickness of the further dielectric layer (3) and the thickness of the additional dielectric layer (33), the dielectric layer thickness being derivable from the electric potential difference and the measurement data.

8. A method as claimed in Claim 3, wherein the step of performing the measurement comprises the step of determining a spectral reflectance of the exposed surface (15) and/or of the further exposed surface (15').

9. A method of manufacturing an electric device (100), the electric device (100) comprising an electrically conductive body (11) having a dielectric layer (13), the dielectric layer (13) being separated from the electrically conductive body (11) by at least one further dielectric layer (3),

the method comprising the steps of:

providing the electrically conductive body (11) with the at least one further dielectric layer (3),

providing the at least one further dielectric layer (3) with the dielectric layer (13), and

performing the method for determining the dielectric layer thickness as claimed in Claim 1 for monitoring the steps of providing the electrically conductive body (11) with the at least one further dielectric layer (3) and/or of providing the at least one further dielectric layer (3) with the dielectric layer (13).

10. An apparatus (10) for determining the dielectric layer thickness according to the method as claimed in Claim 1, the apparatus comprising:

10 a charge source (16) for depositing the electric charge,  
a measuring device (22) for determining the electrical parameter relating to the electric potential difference, and  
a signal processing means (12) for determining the dielectric layer thickness from the electrical parameter and the measurement data.